

**REMARKS**

Claims 14-59 are all the claims pending in the application. Claims 14 and 15 have been amended based on, for example, page 16, fourth full paragraph, and page 17, second and third paragraphs, of the specification.

Claims 22 and 32 have been canceled. Additionally, claims 26, 28, 29, 31, and 33 have been amended to be consistent with claim 14 and so as not to depend from a canceled claim.

Entry of the above amendments is respectfully requested.

Turning to the rejections, claims 14, 18, 21-22, 26, 29 and 32 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Derule et al. (US 5,683,751; Derule '751); further in view of Derule et al. (US 5,814,247; Derule '247); claims 23-25, 27, 30 and 33 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Derule '751 and Derule '247 in view of Speckmann et al. (US 5,230,730); claims 28 and 31 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Derule '751 and Derule '247, in view of Speckmann and Burge et al. (US 5,916,483); claims 34-35 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 and Derule '247 in view of Flasch et al. (US 3,776,881); claims 36-37 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Derule '751 and Derule '247 in view of Hughes et al. (US 6,206,982); claim 17 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 and Derule '247 in view of Melotik (US 3,969,152); claim 15 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Berner et al. (US 4,612,049); claims 39, 42, 45 and 57-59 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Berner and further in view of Speckmann; claims 40 and 43 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Berner and Speckmann, and further in view of Burge; claims 46-47 are rejected under 35

U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Derule '247, in view of Berner, and further in view of Flasch et al. (US 3,776,881); claims 48-49 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Berner and further in view of Hughes; and claim 51 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Derule '751 in view of Berner and further in view of Melotik.

Applicants respectfully traverse the rejection for the reasons of record and for the following additional reasons.

Independent claim 14 is directed to a method of treatment by carboxylation, before shaping, of a metal surface in oxidizing conditions in relation to the metal, comprising bringing the said metal surface selected from the group consisting of zinc, iron, aluminum, copper, lead, alloys thereof, galvanized steel, aluminium-coated steel, and copper-coated steel into contact with an organic or hydro-organic aqueous bath comprising at least one organic acid in free form or in the form of salt to form a conversion layer by carboxylation, wherein:

- the said organic acid is a saturated aliphatic monocarboxylic or dicarboxylic acid having carbon chain of at least C<sub>10</sub>,
- the said organic acid is in solution and/or in emulsion in the bath at a concentration greater than 0.1 mole/litre and 1.5 mole/litre or less,
- the pH of the bath is acidic and is at least 4,

wherein said oxidizing conditions are obtained by addition to the bath of a chemical agent adapted to the metal to be treated.

It is respectfully submitted that Derule '751 does not disclose, teach or suggest the use of an organic acid that is a saturated aliphatic monocarboxylic or dicarboxylic acid having a carbon chain of at least C<sub>10</sub>.

Hence, for at least the above reason, Derule '751 does not render obvious the method

of claim 14. In addition, it is respectfully submitted that the secondary references do not make up for the deficiencies of Derule '751.

Independent claim 15 is directed to a method of treatment by carboxylation, before shaping, of a metal surface in oxidizing conditions in relation to the metal, comprising bringing the said metal surface selected from the group consisting of zinc, iron, aluminum, copper, lead, alloys thereof, galvanized steel, aluminium-coated steel, and copper-coated steel into contact with an organic or hydro-organic aqueous bath comprising at least one organic acid in free form or in the form of salt to form a conversion layer by carboxylation, wherein:

- the said organic acid is a saturated or unsaturated aliphatic monocarboxylic or dicarboxylic acid,
- the said organic acid is in solution and/or in emulsion in the bath at a concentration greater than 0.1 mole/litre and 1.5 mole/litre or less,
- the pH of the bath is acidic, wherein said oxidizing conditions are obtained by causing an electric current to circulate between the said surface previously immersed in the bath and at least one backing electrode which has been likewise immersed.

The Examiner recognizes that Derule '751 does not disclose the use of an electrical current and relies on Berner as teaching a process for forming a conversion coating on a metal surface by treating the metal surface with a corrosion-inhibiting coating solution comprising an aliphatic mono- or di-carboxylic acid having particular formulas. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to incorporate the electrodeposition process as taught by Berner into the coating process of Derule '751 because spray coating an electrodeposition coating are functionally equivalent methods.

Applicants respectfully disagree.

Berner relates to an anti-corrosion primer where the anti-corrosion pigment is an

aliphatic mono or dicarboxylic acid. The layer can be deposited by electrodeposition, but this electrodeposition has no function of obtaining oxidizing conditions since a deposition by a spray is also a possible method of forming the layer without any addition of an oxidizing agent. The electrodeposition taught by Berner is deposition of the primer by cataphoresis. *See e.g.*, claim 22 of Berner.

In the case of the present invention, the aim is to oxidize the metal surface so as to create cations like  $Zn^{++}$  which will, then be able to react with the carboxylate  $COO^-$  anions. The chemical mechanism is completely different in the case of Berner and the present invention. Specifically, Berner does not describe a carboxylation process where a carboxylic acid contained in the bath, in which the metal surface is immersed, reacts with the metal surface in order to form a carboxylate layer.

Accordingly, one of ordinary skill in the art would not look to Berner to arrive at the claimed invention. Thus, even if there were some motivation to combine Derule '751 and Berner, the combination would not result in the method of claim 15.

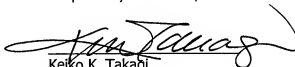
For at least the above reasons, it is respectfully submitted that claims 14 and 15 are patentable over the cited art.

In view of the above, reconsideration and allowance of claims 14-21, 23-31, and 33-59 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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**23373**

CUSTOMER NUMBER

Date: February 12, 2010